MINISTRY OF HEALTH OF UKRAINE ODESSA NATIONAL MEDICAL UNIVERSITY

Faculty of Medicine Department of Human Anatomy

SYLLABUS of the discipline "Human Anatomy"

Scope of the discipline	Total number of hours per discipline:			
	360 hours, 12 credits.			
	Semesters: I, II, 1 year of study.			
Days, time, place of the	According to the schedule of classes.			
discipline	Department of Human Anatomy.			
	Odesa, Valikhovsky Lane 3, classes are held in the 1st and 2nd			
	anatomical halls, as well as in the classrooms of the department.			
	Lectures will be held in large and small anatomical classrooms.			
	With distance learning - on the Teams platform			
Teacher(s)	Teacher(s) 1. Appelhans Elena. <i>Head of the Department, Doctor</i>			
	Sciences, Professor.			
	2. Neskoromna Nataliia, Ph.D, Associate Professor.			
	3. Prus Ruslan. Ph.D, <i>Associate P</i>	•		
	4. Antsut Olga. Senior Teacher, Head teacher of the			
	department.			
	5. Antonova Natalya, Senior Teac	her, Head of the Museum of		
	Human Anatomy.			
	6. Kozhukharenko Tetyana, Senior Teacher.			
	7. Kuznetsova Elena, Senior Teacher.			
	 8. Matyushenko Philip, Senior Teacher. 9. Chebotareva Svitlana, Senior Teacher. 10. Ursu Oleksandr, Senior Teacher. 11. Prus Inna, Assistant. 			
	12. Ostapenko Andriy, <i>Assistant</i> .			
Contact Information	1. Appelhans O. L.	0674842052		
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	6. Kozhukharenko T.I.	0632878972		
	7. Kuznetsova O.A.	0632979525		
	8. Matyushenko P. M.	0672999553		
	9. Chebotareva S. O.	0674838985		
	10. Ursu O.Y.	0971677773		
	11. Prus I.V.	0633422433		
	12. Ostapenko A. O.	0996438030		
	E-mail <u>anatomy@onmedu.edu.ua</u> Consultations are held by the teacher on duty according to the duty schedule; Tuesday, Thursday - 14.30 - 17.30.			
	(For the period of wartime - on-line 7			
	group "Working out - human anatom			

COMMUNICATION

It is carried out using the department's E-mail: anatomy@onmedu.edu.ua, Teams chat, as well as using Viber and Telegram messengers.

ANNOTATION OF THE DISCIPLINE

The subject of study of the discipline "Human Anatomy" is the science of the form, structure, origin and development of organs, systems and the human body as a whole.

Prerequisites: based on the study of medical biology, histology, cytology and embryology, biophysics, Latin, ethics, philosophy, ecology and integrated with these disciplines;

Postrequisites: lays the foundations for applicants to study normal and pathological physiology, pathological anatomy, operative surgery and topographic anatomy, deontology, propaedeutics of clinical disciplines and the formation of skills to apply knowledge of human anatomy in the process of further study of all clinical disciplines and in future professional activities.

The purpose of the discipline: provides for the acquisition by each applicant of knowledge of anatomy in the world of natural science ideas about the structure and functions of the human body as a whole, the ability to use the acquired knowledge in the further study of other fundamental sciences of medicine, and in the practical activities of a doctor.

Objectives of the discipline: there is a systematic approach to the description of the form, structure of organs in unity with the functions performed:

To Know

- a) the form and structure of organs integrated into systems;
- b) the placement of organs, blood vessels, nerves in different parts of the body, which is of great importance for surgery;
- c) aspects of anatomical features of individual human development at different stages of ontogeny;
 - d) patterns of prenatal and early postnatal development of human organs.

Be able to:

- demonstrate and describe the anatomical structure of human organs and organ systems;
- determine parts, surfaces, edges, corners of organs and formations on them on anatomical specimens;
- assess the impact of social conditions and work on the development and structure of the human body;
- apply Latin anatomical terms and their Ukrainian equivalents in accordance with the requirements of international anatomical nomenclature;
- analyze the results of laboratory and instrumental methods of studying the organs and systems of the human body.

Expected results:

To Know:

- the form and structure of organs combined into systems:
- the shape and structure of bones (Osteologia);
- joints of bones (Arthrologia);
- muscles (Myologia);
- viscera (Splanchnologia);
- central and peripheral nervous system (including the autonomic division of the peripheral nervous system (Neurologia);
- endocrine glands (Glandulae endocrinae);
- lymphoid system (Systema lymphoideum);
- sensory organs (Organa sensoria);
- cardiovascular system (Systema cardiovasculare);

Be able to:

- demonstrate and describe the anatomical structure of human organs and organ systems;

- determine the anatomical relationships of human organs and organ systems (organ topography) on anatomical specimens;
- be able to assess the impact of social conditions and work on the development and structure of the human body;
- be able to apply Latin anatomical terms and their Ukrainian equivalents in accordance with the requirements of international anatomical nomenclature (São Paulo, 1997; Kyiv, 2001);

DESCRIPTION OF THE DISCIPLINE

Forms and methods of teaching.

The course will be presented in the form of lectures (44 hours) and practical classes (160 hours), organization of applicants' independent work (156 hours).

Teaching methods include storytelling, conversation, explanation, testing, independent work with anatomical preparations, simulation training on electronic "Anatomage", participation in the restoration of anatomical specimens, filling out the "Self-study notebook" in the discipline.

The content of the discipline

Content module 1. Anatomy of the bones of the skeleton.

- **Topic 1.** Acquaintance with the department. Obligations and rights of higher education applicants. International Anatomical Nomenclature. Axes and planes of the human body, their practical significance. Bone structure and formation.
- **Topic 2.** Structure of the vertebrae. Spinal column. Sternum. Ribs.
- **Topic 3.** Scapula and clavicle. Humerus. Bones of the forearm and hand.
- **Topic 4.** Hip and femur. Lower limb and foot bones.
- **Topic 5.** General information about the skull. Frontal, parietal and occipital bones.
- Topic 6. Sphenoid bone. Ethmoid bone.
- **Topic 7.** Temporal bone: structure, canals, cavity
- **Topic 8.** Bones of the facial skull.
- **Topic 9. The skull** as a whole. The structure of the outer and inner surfaces of the skull. Cranial pits. XII pairs of cranial nerves.
- Topic 10. Nasal cavity. Orbital cavity. Palate.
- **Topic 11.** Temporal, infratemporal and pterygopalatine fossa. Age features.
- **Topic 12.** Description of anatomical specimens from skeletal bones.

Content module 2. Arthrosyndesmology and myology

- **Topic 13.** Overview of bone connections. Connection of the vertebrae to each other. Junction of the ribs with the vertebrae and the sternum.
- **Topic 14.** The connection of the bones of the skull to each other and the 1st, 2nd cervical vertebra. Temporomandibular joint.
- **Topic 15.** Connection of the scapula and clavicle. Shoulder joint. Elbow joint. Connection of the bones of the forearm and hand.
- Topic 16. Connection of the pelvic bones. The pelvis as a whole. Hip joint. Knee joint.
- Connection of the bones of the lower limb and foot.
- **Topic 17.** General information, classification, muscle development in onto- and phylogeny. Muscles and fascia of the back.
- **Topic 18. Facial muscles.** Masticatory muscles. Mechanism of the act of chewing. Fascia of the head, interfascial spaces.
- **Topic 19.** Fascia and neck muscles. Topography: neck triangles.
- **Topic 20.** Chest muscles, fascia, and triangles. Diaphragm. Muscles, fascia, abdominal lines. Areas, inguinal canal.
- **Topic 21.** Muscles, fascia, and topography of the shoulder girdle and shoulder. Muscles, fascia, and topography of the forearm and hand.
- **Topic 22.** Muscles, fascia, and topography of the pelvis, perineum, thigh.
- Muscles, fascia, and topography of the lower limb and foot.
- **Topic 23.** Description of anatomical preparations for topics in arthrosyndesmology and

myology.

Content *module 3*. Splanchnology

Topic 24. Oral cavity. Lips, cheeks, palate.

Topic 25. Tongue: structure, function, muscles. Glands of the oral cavity.

Topic 26. Teeth: formula, structure, bite, change of teeth.

Topic 27. Pharynx. Pirogov's lymphatic ring. Esophagus, stomach.

Topic 28. Small intestine. Large intestine.

Topic 29. Liver. Pancreas.

Topic 30. Peritoneum.

Topic 31. External nose. Nasal cavity. Larynx: muscles, junctions, laryngeal cavities.

Topic 32. Trachea, bronchi, lungs.

Topic 33. Pleura. Mediastinum.

Topic 34. Kidneys: topography, structure, function. Ureters. Bladder. Urethra.

Topic 35. Male genitals.

Topic 36. Female genitals.

Topic 37. Organs of the immune and endocrine systems

Topic 38. Description of anatomical preparations for topics in splanchnology.

Content module 4. Anatomy of the central nervous system and sensory organs.

Topic 39. General information about the nervous system, phylo- and ontogeny of the central nervous system. Anatomy of the spinal cord.

Topic 40. Medulla oblongata.

Pons. Cerebellum.

Topic 41. Isthmus of the rhomboid brain. Fourth ventricle. Rhomboid fossa. Topography of nerve nuclei.

Topic 42. Midbrain.

Topic 43. Diencephalon. Third ventricle.

Topic 44. Telencephlon. Relief of the cerebral cortex. Localization of functions. Basal ganglia. Lateral ventricles.

Topic 45. Olfactory brain. White matter of the hemispheres. Exit points of 12 pairs of h/m nerves.

Topic 46. Meninges. Venous sinuses of the dura mater. Blood vessels and nerves of the brain.

Places of formation and ways of excretion of cerebrospinal fluid.

Topic 47. Ascending Conductive Pathways.

Descending Conductive Pathways.

Topic 48. Description of anatomical preparations for topics from the central nervous system.

Content module 5. Sensory organs and cranial nerves.

Topic 49. The organ of taste and smell. Skin, mammary glands. Pathways and centers of analyzers.

Topic 50. Organ of vision, eyeball. Nucleus of the eye.

Topic 51. Auxiliary apparatus of the eye. The visual pathway and the pupillary reflex pathway.

Topic 52. External ear, middle ear.

Topic 53. Internal ear. Conductive pathways of the organ of hearing and balance.

Topic 54. I, II pair of cranial nerves. III, IV, VI pair of cranial nerves.

Topic 55. Trigeminal nerve – I branch AND II branch.

Topic 56. The trigeminal nerve is the III branch.

Topic 57. Facial nerve. VIII pair of cranial nerves.

Topic 58. IX, X (head and cervical regions), XI, XII pairs of cranial nerves.

Topic 59. Description of anatomical preparations for topics from the sensory organs and cranial nerves.

Content module 6. Anatomy of the heart. Cardiovascular system.

Topic 60. Circulatory circles. Heart: structure, chambers, valves.

Topic 61. Topography of the heart. Valve listening points. Blood vessels and nerves of the heart.

Core.

- **Topic 62.** Aorta: parts, branches of the aortic arch. External carotid artery.
- **Topic 63.** Internal carotid artery: branches. Subclavian artery: sections, branches. Head and neck anastomoses.
- **Topic 64.** Axillary artery. Arteries of the shoulder, forearm, hand. Arterial arches.
- **Topic 65.** Thoracic aorta, its branches.
- **Topic 66.** Abdominal aorta: unpaired visceral branches
- **Topic 67.** Abdominal aorta: paired visceral and parietal branches.
- Topic 68. Internal iliac artery.
- **Topic 69.** External iliac artery. Branches of the femoral artery. Vessels of the lower leg and foot
- **Topic 70.** Superior vena cava. Veins of the head and neck, upper limb.
- **Topic 71.** Inferior vena cava. Veins of the walls and organs of the pelvis, veins of the lower limb.
- **Topic 72.** Veins of the abdominal cavity. Portal vein. Kava-kaval and porto-kaval anastomoses, kava-porto-kaval anastomoses.
- **Topic 73.** Lymphatic system, structure, function, trunks. Lymphatic vessels and nodes of the head and neck. Lymphatic vessels and nodes of the thoracic, abdominal and pelvic cavities, upper and lower extremities.
- **Topic 74.** Description of anatomical preparations of the heart and blood vessels.

Content module 7. Peripheral nervous system.

- **Topic 75.** Spinal nerves. Cervical plexus, its structure, sensitive branches. Muscular branches. Mixed branch.
- **Topic 76.** The brachial plexus, its structure and short branches. The brachial plexus is long branches.
- **Topic 77.** Thoracic spinal nerves. Lumbar plexus, its structure and branches.
- **Topic 78.** Sacral plexus, its structure, short branches, long branches
- **Topic 79.** The autonomic nervous system is the sympathetic division and the parasympathetic division.
- **Topic 80.** General principles of complex innervation and blood supply to internal organs.

12. Recommended literature.

Basic

- 1. Human anatomy: a textbook /V.R. Cherkasov, S.Y. Kravchuk. Vinnytsia: New book, 2020. 656 p.
- 2. Atlas of human anatomy: 7th edition / Frank G. Netter (bilingual) [science. ed. trans.from English L.R. Mateusz-Watseba, others]. All-Ukrainian. Special "Medytsina" publishing house, 2020. 736 p.
- 3. Sobotta. Atlas of human anatomy. In 2 volumes. Processing and editing of the Ukrainian edition: V.G. Cherkasov, trans. O.I. Kovalchuk. Kyiv: Ukrainian Medical Bulletin. 2019.

Additional

- 1. Human anatomy: a textbook in three volumes / edited by prof. V.G. Kovechnikov. Lugansk 2011.
- 2. Gray's Anatomy/H. V. Carter Henry Gray/ Barnes & Noble, 2018. 1280 p.
- 3. Test tasks "Step-1" human anatomy / 5th edition, revised / Edited by V.G. Cherkasova, I.V. Dzevulska I.V., O.I. Kovalchuk Tutorial. 2016. 100 p.
- 4. Human anatomy. V.G. Cherkasov, S.Yu. Kravchuk Vinnytsia: Nova kniga, 2015.184 p. (educational and methodical manual).
- 5. Human anatomy (control of independent preparation for practical classes) for students. higher medical (pharmaceutical) studies. closing IV level of accreditation] / Educational and methodological manual / Edited by V.G. Cherkasova, I.V. Dzevulska I.V., O.I. Kovalchuk
- 6. Frederic Martini Anatomical atlas of man: Trans. from the 8th Eng. Type [scientificed.trans. V.G. Cherkasov], A-USPH "Medicine", 2017. 128 p. (Atlas)

13. Electronic Information Resources

- 1. http://anatom.ua is a leading resource on Human Anatomy
- 2. https://www.primalpictures.com, is a 3D anatomy resource for educators, students, practitioners, and professionals
- 3. https://www.visiblebody.com is a resource of the international educational community "Visible Body"
- 4. https://3d4medical.com The World's Most Advanced 3D Anatomy Platform
- 5. https://info.odmu.edu.ua/chair/anatomy/files/6/ua materials from the course "Human Anatomy"

EVALUATION

Forms of control and methods of assessment (including criteria for assessing learning outcomes)

Current control: oral questioning, testing, assessment of the implementation of practical skills knowledge of anatomical preparations, followed by analysis and assessment of sex, age, individual features of the structure of human organs, solving situational problems, assessment of skills to analyze topographic and anatomical relationships of human organs and systems; assessment of skills to analyze the patterns of prenatal and early postnatal development of human organs, variants of organ variability, malformations; control over the correctness of filling out the Self-Study Notebook, assessment of activity in the classroom.

Final control: exam.

Assessment of current learning activities in the practical lesson:

Assessment of the success of studying each topic of the discipline "Human Anatomy" is carried out on a traditional 4-point scale.

- 1. Assessment of theoretical knowledge on the topic of the lesson by questioning, solving tests and situational tasks:
 - The maximum score is 5, the minimum grade is 3, and the unsatisfactory grade is 2.
- 2. Assessment of practical skills on the topic of the lesson:
 - The maximum score is 5, the minimum grade is 3, and the unsatisfactory grade is 2.

The grade for one practical lesson is the arithmetic mean for all components and can only have an integer value (5, 4, 3, 2), which is rounded according to the statistical method.

At the practical lesson, students must be interviewed at least once in 2 practical classes, at least 75% of applicants. At the end of the semester, the number of grades for applicants in the group should be the same on average.

Criteria for current assessment in the practical lesson:

Score	Evaluation criteria		
Excellent "5"	The higher education applicant is fluent in the material, takes an active part in		
	the discussion and solution of tests, situational clinical tasks, confidently		
	demonstrates practical skills during the examination and description of an		
	anatomical preparation. Expresses his/her opinion on the topic of the lesson,		
	demonstrates clinical thinking.		
Well	The higher education applicant has a good command of the material,		

«4»	participates in the discussion and solution of situational clinical problems, tests,
	demonstrates practical skills during the examination and description of an
	anatomical drug with some errors, expresses his opinion on the topic of the
	lesson, demonstrates clinical thinking.
Satisfactory	The higher education applicant does not have sufficient knowledge of the
"3"	material, hesitantly participates in the discussion and solution of a situational
	clinical problem, demonstrates practical skills during the examination and
	description of an anatomical preparation with significant errors.
Disappointing	The higher education applicant does not know the material, does not participate
«2»	in the discussion and solution of a situational clinical problem, does not respond
	to tests, does not demonstrate practical skills during the examination and
	description of the anatomical apparatus.

Only those applicants who have fulfilled the requirements of the curriculum in the discipline, have no academic debt, their average score for the current educational activity in the discipline is at least 3.00 and they have passed the test control on the tests "KROK-1" by at least 90% (50 tasks) are allowed to the final control in the form of an exam.

Test control is carried out in the Educational and Production Complex of Innovative Technologies of Training, Informatization and Continuing Education of ONMedU on the eve of the exam.

Assessment of learning outcomes during the final control – exam.

The exam is held in the Educational and Production Complex of Innovative Teaching Technologies, Informatization and Internal Monitoring of the Quality of Education of the University during the examination sessions at the end of the semester (autumn and spring) according to the schedule.

During the exam, the applicant receives a standardized ticket, and the examiners use a checklist for the corresponding ticket with reference answers and determine which mandatory components of the answer were named or not named by the applicant.

Ticket contents
Overview and description of the anatomical specimen UDRZ
4 (four) theoretical questions

The total score for the exam is compiled as the arithmetic mean of all grades received for answers to theoretical questions and practical tasks on a traditional four-point scale, rounded to two decimal places.

Criteria for assessing the learning outcomes of students in the exam

Score	Evaluation criteria
Perfectly	It is awarded to a higher education applicant who has worked systematically
«5»	during the semester, has shown during the exam a versatile and deep knowledge
	of the program material, is able to successfully perform the tasks provided by
	the program, has mastered the content of the main and additional literature, has
	realized the relationship between individual sections of the discipline, their
	importance for the future profession, has shown creative abilities in
	understanding and using educational and program material, has shown the
	ability to independently update and replenishment of knowledge; level of
	competence – high (creative);

Well	It is given to a higher education applicant who has shown full knowledge of the
«4»	educational and program material, successfully performs the tasks provided by
	the program, has mastered the basic literature recommended by the program,
	has shown a sufficient level of knowledge in the discipline and is capable of
	their independent updating and updating in the course of further education and
	professional activity; level of competence – sufficient (constructive-variable)
Satisfactory	It is awarded to a higher education applicant who has shown knowledge of the
«3»	main educational and program material to the extent necessary for further study
	and subsequent work in the profession, copes with the tasks provided for by the
	program, made some mistakes in the answers to the exam and when performing
	exam tasks, but has the necessary knowledge to overcome the mistakes made
	under the guidance of a scientific and pedagogical worker; Level of competence
	– intermediate (reproductive)
Disappointing	It is given to a higher education applicant who has not shown sufficient
«2»	knowledge of the basic educational and program material, has made
	fundamental mistakes in the performance of the tasks provided by the program,
	cannot use the knowledge in further education without the help of a teacher,
	has not been able to master the skills of independent work; Level of competence
	- low (receptive-productive)

9. Distribution of points received by higher education applicants

The average score for the academic discipline for applicants who have successfully mastered the work program of the discipline is converted from the traditional four-point scale into points on a 200-point scale, as shown in the table:

Traditional	Score to	Multinoi	nt Scale	Conversion	Table
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Traditional four-point scale	Multi-point 200-point scale
Excellent ("5")	185 - 200
Good ("4")	151 – 184
Satisfactory ("3")	120 – 150
Unsatisfactory ("2")	Below 120

A multi-point scale (200-point scale) characterizes the actual success of each applicant in mastering the educational component. The conversion of the traditional grade (average score for the academic discipline) into a 200-point grade is carried out by the Information and Technical Department of the University.

According to the points received on a 200-point scale, the achievements of applicants are evaluated according to the ECTS rating scale. Further ranking according to the ECTS rating scale allows you to evaluate the achievements of applicants in the educational component, who are studying in the same course of the same specialty, in accordance with the points they receive.

The ECTS scale is a relative comparative rating scale, which establishes the applicant's belonging to the group of the best or worst among the reference group of fellow students (faculty, specialty). A grade "A" on the ECTS scale cannot be equal to an "excellent" grade, and a grade "B" cannot be equal to a "good" grade, etc. When converting from a multi-point scale, the boundaries of grades "A", "B", "C", "D", "E" on the ECTS scale do not coincide with the limits of marks "5", "4", "3" on the traditional scale. Applicants who have received "FX" and "F" ("2") grades are not included in the list of ranked applicants. The "FX" grade is given to applicants who have scored the minimum number of points for the current educational activity, but who have not been credited with the final control. The grade "F" is given to applicants who have attended all

classes in the discipline, but have not received an average score (3.00) for the current educational activity and are not allowed to the final control.

Applicants studying in one course (one specialty), based on the number of points scored in the discipline, are ranked on the ECTS scale as follows:

Conversion of the traditional grade in the discipline and the sum of points on the ECTS scale

ECTS score	Statistical indicator
And	Top 10% of applicants
Into	The next 25% of applicants
С	The next 30% of applicants
D	The next 25% of applicants
E	The next 10% of applicants

INDEPENDENT WORK OF HIGHER EDUCATION APPLICANTS

Assessment of the student's independent work. The material for applicants' independent work, which is provided in the topic of the practical lesson simultaneously with the classroom work, is evaluated during the current control of the topic in the relevant classroom lesson.

ACADEMIC DISCIPLINE POLICY

Deadline & Retake:

- Absences from classes for unreasonable reasons are worked out according to the schedule for the teacher on duty.
- Absences for valid reasons are worked out according to an individual schedule with the permission of the dean's office.

Academic Integrity:

It is mandatory to observe academic integrity by applicants, namely:

- independent performance of all types of work, tasks, forms of control provided for by the work program of this discipline;
- references to sources of information in the case of using ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;
- providing reliable information about the results of their own educational (scientific) activities, research methods used and sources of information.

Unacceptable in educational activities for participants in the educational process are:

- the use of family or official ties to obtain a positive or higher grade in the exercise of any form of control over learning outcomes or preferences in scientific work;
- use of prohibited auxiliary materials or technical means (cheat sheets, notes, microheadphones, phones, smartphones, tablets, etc.) during control measures;
- passing the procedures for monitoring the results of training by fictitious persons.

For violation of academic integrity, students may be held accountable for the following academic liability:

- decrease in the results of the assessment of the test, grade in the classroom, test, etc.;
- repeated assessment (test, test, etc.);
- appointment of additional control measures (additional individual tasks, tests, tests, etc.);
- conducting an additional check of other works authored by the violator.

Attendance & Tardiness:

Dress code: medical gown, cap. Equipment: notebook, pen. Health condition: applicants with acute infectious diseases, including respiratory diseases, are not allowed to study.

An applicant who is late for a lesson can attend it, but if the teacher put "nb" in the journal, he must work it out in the general order.

Use of mobile devices: mobile devices can be used by applicants with the permission of the teacher, if they are needed to complete the task.

Behavior in the classroom: The behavior of students and teachers in the classrooms should be working and calm, strictly comply with the rules established by the Regulations on Academic Integrity and Ethics of Academic Relations at the Odessa National Medical University, in accordance with the Code of Academic Ethics and Relations of the University Community of the Odessa National Medical University, Regulations on the Prevention and Detection of Academic Plagiarism in Research and Educational Work of Higher Education Applicants, Scientists and Teachers of Odessa National Medical University